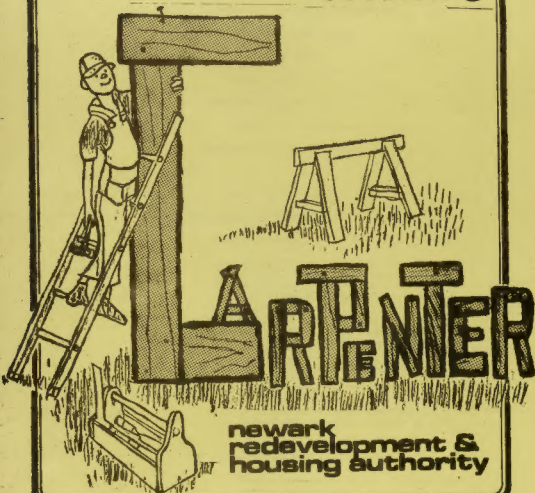


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SIMPLE HOME REPAIRS

session 5



**newark
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HOMEOWNERS TRAINING COURSE

AT

NEWARK REDEVELOPMENT AND HOUSING AUTHORITY

MAINTENANCE TRAINING CENTER

4 Sheffield Drive

Newark, N.J. 07104

Saturday, October 8, 1977

9:00 a.m. - 1:00 p.m.

Instructor: Peter J. Doherty

C A R P E N T R Y

Session #5

Gutters, Shingles and Siding

A) Gutters (repairs)

1. Locate bad section of gutter.
2. If metal type, scrape interior of gutter with steel brush.
3. Coat with thin layer of asphaltum paint and let dry.
4. Coat with heavy layer of roof cement.
5. While cement is still wet, cover area with strips of heavy aluminum foil.
6. If wood gutter, scrape interior of gutter with steel brush.
7. Coat with layer of roof cement.
8. While still wet cover area with saturated woven glass membrane.
9. Trowel over with second layer of roof cement.

B) Gutter (replacing)

1. Locate section of gutter to be replaced; either wood or metal.
2. Cut out bad section.
3. Replace and make correct joints and caulk.
4. Make sure when gutter is secured it has correct slope (pitch).

CARPENTRY

Session #5

Gutters, Shingles and Siding (continued)

C) Shingles and Siding.

1. Locate bad or damaged shingles or siding.
2. Cut out and remove all wood and old nails.
3. Be careful not to damage building paper behind shingles or siding.
4. Select correct amount of shingles or proper length of wood siding.
5. Slip new material up into place and secure with aluminum or galvanized nails.
6. Set nail heads below surface of wood and putty.
7. Paint new wood.

Cleaning and maintenance

Roof gutters need cleaning at least twice a year, once before the start of winter and again right after spring. If your house is located in a heavily wooded area, more frequent cleaning may be required—leaves, twigs, and seed pods are the worst culprits when it comes to clogging. When they are allowed to accumulate and clog gutters and downspouts, back-up water during a heavy rain has no place to go, and will cascade over the gutters, washing away topsoil and damaging the plants below. Furthermore, the constant wetting and drying, in time, will rot the fascia boards under the gutters.



Removal of debris from the gutters is best done by hand; use gloves. A garden hose will flush away remaining material.



Leaf strainers should be made out of copper or stainless steel, insert just deep enough to catch leaves, not flush.



Leaf guards fit between shingle ends and lip of gutter. They shed large leaves and allow water to flow into the gutter.



Check the gutter hangers. Replace if necessary with nonferrous or galvanized nails. Cover nailheads with roof cement.



Many gutters are supported with a long copper spike passing through a metal sleeve and driven into the roof board.



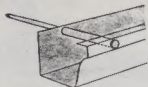
Stoppage often occurs at elbow between downspout and gutter. An electrician's snake can be used to clear out debris.

To clean gutters, you need a ladder long enough to reach the highest gutter. Clean out as far as possible on either side of the ladder; about 2 feet in each direction is average. Caution: Do not be tempted to stretch beyond a normal reach to avoid moving the ladder. Move it—and avoid a fall.

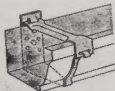
Sagging gutters: A gutter that sags will also be a dripping gutter. Gutters should be slanted or pitched to the downspout about 1/4 inch for each foot of their length. Important: Quite often a long gutter will slant toward two downspouts, one at each end with the high spot in the middle.

Adjusting gutter hangers

The three styles of gutter hangers shown below should be adjusted so that each one bears its share of the load supporting the gutters. Use a support every 30 in. and a support at each end of a corner installation.



Sleeve and spike hanger: Sleeve fits within the gutter and spike is driven into roof board.



Bracket hanger: Bracket is nailed or screwed to fascia board right below the roof.



Strap hanger: Strap is nailed to roof under shingle. Cover nailheads with roof cement.

Selecting gutters and estimating needs

Your choice of gutters and downspouts for partial replacement is often governed by the type on the house at present, especially when you must match a new gutter to an old one. (Never connect aluminum to steel to copper in any combination because of the corrosive electrolytic action between them.) When you are planning to replace all gutters, however, or to install them on a new house, you can use whatever you wish.

Steel gutters are available galvanized and with a white enamel finish. Enameled gutters and downspouts are slightly more expensive. Steel guttering is about the lowest-priced drainage system you can buy. Its chief drawback is its short life compared to other materials. Painting helps to make steel last longer. Do not paint galvanized gutters and downspouts, however, until they have weathered for at least a year. Also paint will flake off galvanized steel unless it is preceded by a special primer.

Copper gutters and downspouts are usually installed by a professional roofer because joints must be soldered instead of just clipped together. Copper gutters are virtually corrosion-resistant, though leaks may develop at the soldered joints. As the gutters

age, they will take on copper's typical green patina, so it is best to leave them unpainted.

Aluminum gutters and downspouts come white-enameled as well as unfinished. They can be cut to size with a fine tooth hacksaw. Being lighter in weight than steel or copper gutters, they are much easier to handle. Also they offer better corrosion resistance than steel. Remember, however, that they do not have the strength of steel; they can be dented by mere pressure from a ladder.

Plastic gutters are practically maintenance-free. When installing them, make allowance for expansion; they will buckle if installed too tightly. A special mastic is used at all joints to make connections. Metal is used only for the hangers.

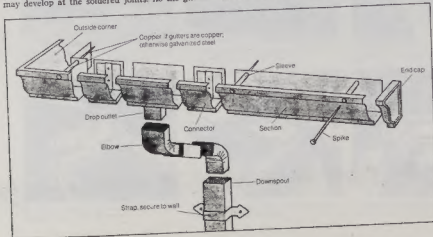
Wood gutters are specified by some architects for aesthetic reasons (compatibility with the character of the house), or sometimes because they can be put up by the builder's carpenter instead of a roofer. See opposite page for care of wood gutters.

How to calculate your needs. Generally, it is best to replace an entire gutter run rather than just a section of it. When you do replace only a section, measure the old piece or pieces carefully from seam

to seam and determine the number of lengths needed. Most gutters are available in 10-foot lengths, though a few manufacturers make longer sections. Also measure the size of each fitting and count the number of hangers or spike and ferrule sets needed. Take a small section of the old gutter to your building supply dealer to be sure you get a good match.

When installing a completely new run, make a sketch of the roof area involved. From this, determine the number of 10-foot lengths needed, as well as the number of other fittings required. Keep in mind that you need one slip connector at each point where gutter sections meet or where outlet and corners are installed, and that one hanger or ferrule set should be installed for every 3 feet of gutter run.

Regardless of the arrangement on the old gutter, plan to have one downspout for each 35 running feet of gutter. Offset elbows are needed to permit the downspout to be mounted flush against the house, and one is required at the bottom of the leader to keep the water away from the house (unless, of course, the downspout leads to a dry well). A little paperwork at the planning stage will cut down on material waste and trips to the dealer.



Gutters more than 35 ft. long should be pitched to a downspout at each end. A drop of $\frac{1}{8}$ in. for each foot of length should be allowed for drainage.



Do not assume that roof line is level when laying out gutters. Check with a level. Then snap a chalk line after allowing for required pitch.

Installing new gutters

How to cut and fit gutters



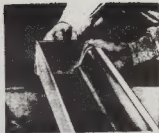
Support the inside of the gutter with a 2 x 4 and use a hacksaw to cut it to length.



File away all burrs. This will make it easier to install the slip connectors.



If using spike supports, drill holes through front and back of the gutter near top edge.



Fit the cap to the end of the gutter after first applying caulking compound as a seal.



Apply caulking to connectors before joining with gutters to make a waterproof joint.



Slip-joint connectors are used to join all sections. Make certain they fit tightly.



After parts have been inserted, bend edge of connectors down against gutter with pliers.



Drive the spike through the front lip of gutter, sleeve, and fascia board into rafter.



Corner joints should be reinforced by nailing a spike on each side of the corner.



If strap hangers are used to support the gutter, lift shingles and nail as shown.

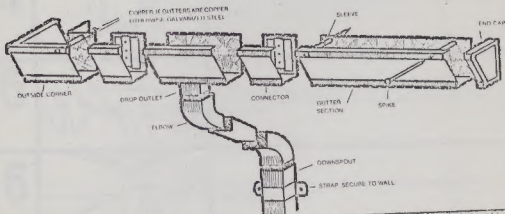
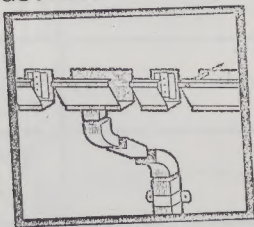


Install cap at end of gutter adjacent to downspout. Seal with caulking compound.

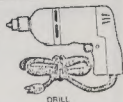
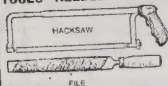


Downspout is connected by slipping it over the stub-length downspout connector.

HOW TO: INSTALL GUTTERS



TOOLS NEEDED:



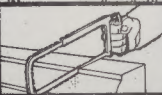
HOW TO: INSTALL GUTTERS

1



When measuring for gutters and planning their placement, be sure to allow a pitch of one eighth of an inch for every foot in gutters more than 35 feet long. In your placement of the gutter, also make sure that the roof line is level. You should figure your gutter needs well ahead, not forgetting that you will need one ferrule or hanger every three feet.

2



Use a hacksaw to cut the gutter, which is supported by a 2" x 9" piece of wood inside.

3



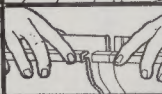
All burrs should then be filed away and the holes drilled for the spikes and ferrules.

4



Apply caulking compound to the end of the gutter and fit the end cap.

5



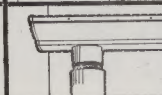
Slip-joint connectors should be used and sealed with waterproof caulking. The connectors should also be properly bent into place.

6



Reinforce corner joints by nailing a spike on each side of the special gutter section.

7

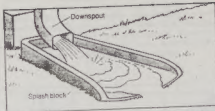


Connect the downspout by slipping it over the downspout connector on the special gutter section.

Splash blocks

Water that is allowed to pour directly from downspout to ground may ultimately find its way through the foundation wall and into the basement. One way to prevent this: Let the water fall on splash blocks. These prevent soil erosion under the downspout and also tend to lead water away from the foundation.

There are several other devices more effective than masonry splash blocks. Among them are fabric sleeves which fasten directly to the downspout. Perforations along the extended sleeve cause the water to flow gently rather than pour out. One sleeve type even has a spring that coils it up between rains; the weight of the descending water unrolls it.



Ready-made concrete splash blocks are available from building supply dealers; use them to divert rainwater.

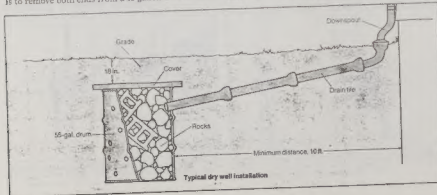
Dry wells

The best solution to roof water drainage problems is to connect all downspouts to a storm sewer or dry well. Such an arrangement calls for the installation of drainage pipes or tiles in an underground trench about a foot below the surface near the downspout and sloping about 1/8 inch per foot as it runs away from the house to the storm sewer or dry well.

A dry well, used where storm sewers are not available, is just a large hole in the ground filled with rocks and covered with wood planks or a concrete slab to keep out topsoil. One way to build a dry well is to remove both ends from a 55-gallon oil drum, cut

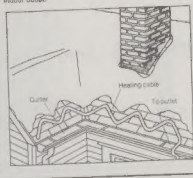
a hole in one side to accept the drainpipe, and punch a few dozen random holes in the metal to permit water seepage. Then bury the drum in the ground (at least 18 inches deep) and fill it with rocks and rubble. Cover it with wood planks to keep spaces between the rocks from filling up with dirt.

A dry well may also be built using concrete blocks laid on their sides and separated a few inches at the joints to form a hollow square in the center. A hole 3 feet square is minimum; a 3-x-6- to 3-x-8-foot hole is best. All dry wells should be located at least 10 feet from foundation walls.



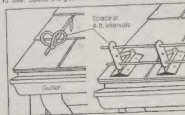
Preventing an ice dam

Use electric heating tapes along the roof edges to prevent snow and ice formations. The tape is laid along the roof in a zigzag pattern and held in place with special clips. Then during stormy weather the tape can be plugged into the closest available outdoor outlet. The front entrance light could serve this purpose, or the tape might be drawn through a window and plugged into an indoor outlet.



Snow guards

Install snow guards to stop "avalanches" of snow and ice from sliding off the roof. These guards are available at hardware dealers; the precise type of guard and method of installation will depend on the style of your roof. As a rule, the steeper the roof, the more guards you will need to use. Space the guards out evenly over roof near eaves.



Wood and asbestos shingles

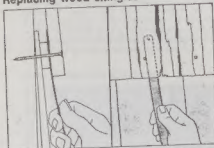
Wood shingles, as a rule, are easier to repair than clapboard. You can usually fix those that have split or warped by simply nailing them down with aluminum or galvanized nails. If the shingle is on the exposed side of the house, however, where strong wind-driven rains could penetrate the cracks, cut a piece of roofing paper approximately the size of the shingle

and slip it underneath the shingle before nailing it down. This will help to waterproof the patch.

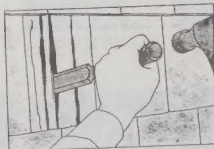
Ordinarily, asbestos shingles, because they are not vulnerable to rot or weather, need little maintenance. Since they are relatively brittle, however, some shingles, especially in the lower courses, may become damaged and require replacement.

If you find that more than 10 percent of the shingles on a wall require replacement, it is best to replace the entire wall. If you are replacing an entire wall of asbestos shingles, save the old undamaged shingles—they can be used again. In wood shingle replacement, the old ones are left in place and used as the undercourse for the new wall.

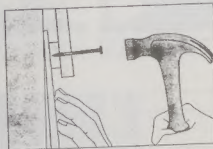
Replacing wood shingles



Slip a hacksaw blade under the bottom of the good shingle and cut the nails that hold the top of the damaged shingle. In the same way, cut nails at bottom of the damaged shingle.

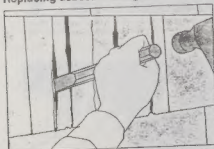


To remove the damaged shingle, it is necessary, first, to splinter it. Then remove stubs of previously cut nails with a claw hammer or with pliers.



Slip a new shingle, the same size and thickness as the old one, into the open cavity. Top of new shingle is overlapped by upper shingle course; bottom overlaps lower shingle course.

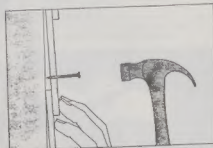
Replacing asbestos shingles



To remove an asbestos shingle, break it into pieces with a chisel and hammer. Do this carefully to avoid damaging nearby shingles. Remove nails with claw hammer or pliers.



Shingles can also be removed by sawing through nails with a hacksaw or prying them out with a screwdriver, or by drilling through the nailheads or cutting them with chisel.



Asbestos shingles are not nailed at the top edge, so the new shingle is slid up from below, placed in position, then nailed in place through predrilled holes along bottom edge.

Repairing damaged clapboard

How to repair clapboard

Whenever you find a piece of warped or split clapboard, repair it immediately. Moisture entering the wall beneath the warp or through the crack will, in time, rot out a section of the wall from the inside before there are any external signs of damage. The first indication of this: When the paint starts to peel in the room adjacent to the damaged section.

Because clapboards are overlapped and nailed together, it might seem that disturbing one board would require removing the next one above, and so on up the wall to the top. This is not so. One board or even a part of a board can be pulled up or out and repairs made without tearing down the wall.



To repair split clapboard, pry out loose portion and coat both edges of the split with waterproof glue.



Clamp split together by driving nails below lower edge and bending them up to close crack. Remove nails when glue sets.



When renailing warped clapboard, drill pilot holes to prevent splitting. Drive nails so heads are slightly countersunk.

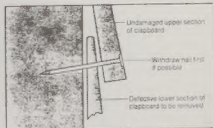
How to replace clapboard



Cut out damaged section with backsaw. Avoid damaging the good board below by using point of saw for final cut.



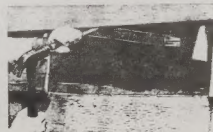
Use sharp chisel and hammer to remove chunks of the out board. Be careful not to cut the building paper or felt paper below.



Cross section of clapboard shows the rotted lower board which is to be removed and the nails that are holding it.



Insert wedges or screwdriver gently under the upper board, cut the nails holding the overlapping board with hacksaw.



With upper board wedged in place, chisel out ends of cut board flush to saw cuts. Replace rotted building paper.



Drive in new board; nail in place with aluminum or galvanized nails. Countersink nails, fill holes with putty, and paint.